

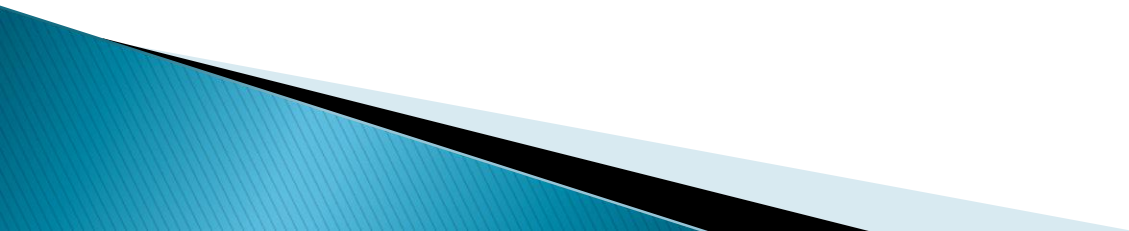


# Journey to Post Construction Stormwater

Steven J. Sly, CFM  
Engineering Specialist

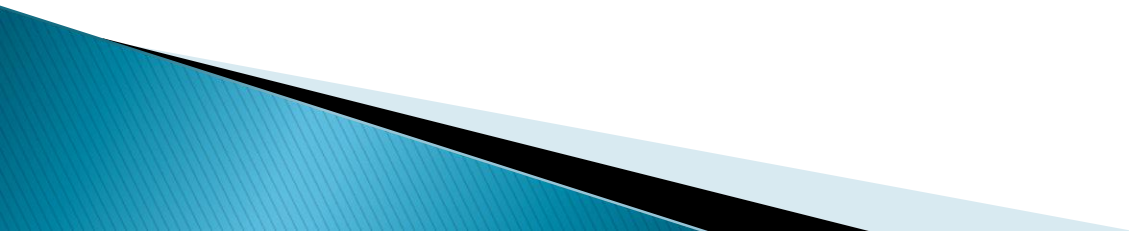
# Fargo's Construction Permit History

The Journey into the post construction.



Please ask any questions during this presentation .....

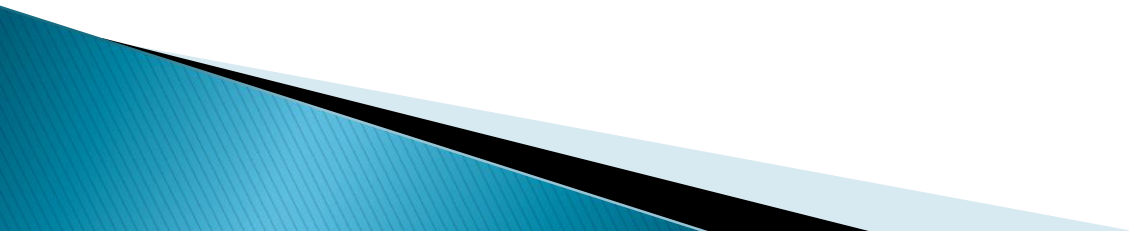
We are here to learn!



# MS4 Construction Site Permitting Program

Fargo's construction permitting was gradually phased-in over an entire year beginning March 2006.

The year was devoted to educating builders, owners and suppliers about the program.



# What triggers an ESC Permit?

- ▶ Land disturbing activity greater than 5,000 SF
  - Not gardens or flower beds or minor construction, etc.
  - Must permit if site has a potential to discharge?
  - Required even if removing a structure.
  - Not required if project is under control of city engineer (3300).



**GUIDE TO EROSION AND SEDIMENT  
CONTROL PRACTICES**

Revised January 2007



City Engineering Department  
200 N 3rd Street  
Fargo, ND 58102  
Phone: 701-241-1545  
Fax: 701-241-8101  
Email: stormwater@cityoffargo.com

## ESC PERMIT

EROSION & SEDIMENT CONTROL PERMIT

PERMIT #	
DATE	
FEE	
EXPIRES	

Owner / Operator	Please Print	
Billing name if different from above		
Billing Address		
City	State	Zip
Please Check One: <input type="checkbox"/> <b>Construction of One and Two Family Dwellings</b>		
<input type="checkbox"/> <b>All Other Construction (Commercial, Utility, Etc.)</b> <b>REQUIRES</b> a Stormwater Pollution Prevention (SWPP) / Erosion Control Site Plan submitted with this permit application.		
EROSION CONTROL PLAN REVIEWED by _____		
Estimated Completion Date _____		

Street Address of Construction Site	
Site Foreman or Contact Person (Please Print)	
Contact PHONE #	Contact FAX #
Contact EMAIL	
Comments:	

Projects that disturb one or more acres must obtain coverage under the ND Department of Health's construction general permit (NDPDES Permit - NDR10-0000). This also includes projects that disturb less than one acre that are part of a development. i.e. residential construction.  
Phone 701.328.5242 - FAX 701.328.5200 - [www.ndhealth.gov/wq/](http://www.ndhealth.gov/wq/)

Permit Fees Calculation					
	FEE	SITE ACREAGE	TOTAL		
Within City Limits \$5.00/Acre \$20.00 minimum	\$ 5.00	X _____	= _____	<input type="checkbox"/>	\$20.00 Minimum
Extraterritorial \$10.00/acre - \$50.00 minimum	\$10.00	X _____	= _____	<input type="checkbox"/>	\$50.00 Minimum
Note: A late fee is required if land disturbing activity occurs prior to permitting.				<input type="checkbox"/>	\$30.00
[1 Acre = 43,560 Square Feet]			TOTAL	_____	

Permit Issued by

Stormwater 01/11

Printed Name Of Applicant

Applicant Signature

By signing this Permit, I acknowledge and agree to comply with all city of Fargo rules and regulations concerning stormwater management, Chapter 37 of the City of Fargo Municipal Code.  
See reverse side

Print Form

Reset Form



Engineering Department  
200 3rd Street North  
Fargo, ND 58102

Phone 701.241.1545  
Fax 241.8101  
Email: feng@cityoffargo.com

## Notice of Stormwater Violation and Order to Correct

FARGO MUNICIPAL CODE 37-0402

OWNER / OPERATOR

CONSTRUCTION SITE ADDRESS

CONTACT FAX #

PERMIT #

Date / Time

Owner / Operator of this site shall correct the site's deficiencies listed below within:

48 HOURS  
From Date Posted

A re-inspection of the site for compliance will follow after 48 hours<sup>1</sup>.

Confirm receipt of this Fax immediately < [SIGN & FAX](#) > 701-241-8101

### SITE DEFICIENCIES - VIOLATIONS

- ☐ BMP's NOT placed or maintained
- ☐ Grass buffer strip compromised
- ☐ Illegal temporary entrance
- ☐ Illegal discharge<sup>2</sup>
- ☐ Inlet protection
- ☐ No ESC Permit
- ☐ Street tracking<sup>3</sup>
- ☐ Other >>>>>

### CORRECTIVE ACTION REQUIRED

Issued by

### Additional Enforcement Action

- 1: If non-conforming conditions exist upon re-inspection, the owner, operator or permit holder shall be subject to a re-inspection fee of \$60/hr (\$30 minimum). Failure to correct may also result in prosecution under the Fargo Municipal Code (with penalty not to exceed \$500.00).
- 2: A live, illegal discharge is grounds for the immediate issue of a **Stop Work** order.
- 3: Tracking onto city streets can, at any time, result in a citation and **Summons to Appear** under section 11-0901 of the Fargo Municipal Code.

### Re-inspection Fee

_____	Date & Fee _____
_____	Date & Fee _____
_____	Date & Fee _____
_____	Date & Fee _____
_____	Date & Fee _____
_____	Date referred to City Attorney _____
TOTAL _____	

>>> Owner / Operator - Sign and FAX to 701-241-8101

Stormwater Violation Form 01/11

Print Form

Reset Form





Engineering Department

200 3rd Street North  
Fargo, ND 58102

Phone 701.241.1545

Fax 241.8101

Email: feng@cityoffargo.com

## Stormwater Appeal Request Form

37-0406

OWNER / OPERATOR

CONSTRUCTION SITE ADDRESS

PHONE

Date

☐ City Engineer

☐ Public Works Project Evaluation Committee

☐ Fargo City Commission

Comments:

SIGNATURE

Stormwater Appeal Request Form 2011

Print Form

Reset Form

**REFERRAL TO CITY ATTORNEY  
CODE VIOLATION**

**TO:** Office of City Attorney; attn: Scott Diamond

**REQUEST:** Please issue a warning letter  
If appropriate, please commence criminal complaint  
Please issue an administrative citation

**VIOLATOR'S NAME:**

**Phone Number(s)**(home, work and/or cellular):

**VIOLATOR'S ADDRESS:**

**SUBJECT PROPERTY ADDRESS:**

**SUBJECT PROPERTY OWNER'S NAME AND ADDRESS IF DIFFERENT FROM  
VIOLATOR:**

Name of Inspector

Date

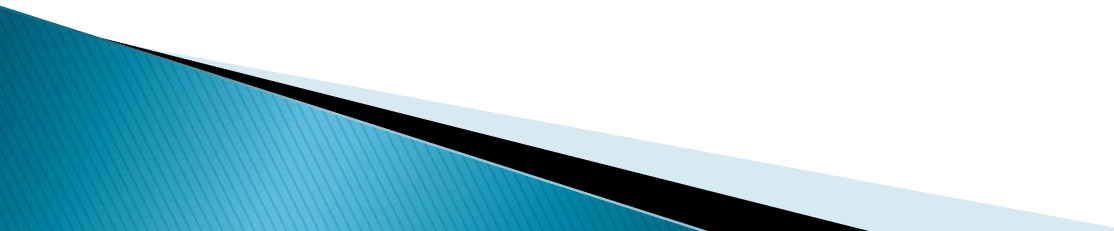
Phone:

# Construction Program's Lingering Concerns

## Tracking

### Improper BMP installation and maintenance

A tracking violation is issued when a contractor fails to clean up significant amounts of sediment tracked down the block.



Permits	Issued	\$ Revenue	Violations	\$ Fees	Violations to Permits	Specific Infraction	Inspectors	\$ Total Revenue
2011	395	8,936	190	572	31.6%	408	Josh/Mark	9,508
2010	356	7,917	229	390	64.3%	463	Joe	8,307
2009	362	7,496	295	300	81.5%	477	Craig	7,796
2008	428	10,785	304	3,240	71.0%	575	Mike	14,025
2007	489	11,636	351	2,880	71.8%	1,166	John	14,516
2006	367	7,460	36	-	9.8%	36	Steve	7,460
2005	-	0	-	-	-	-	-	-

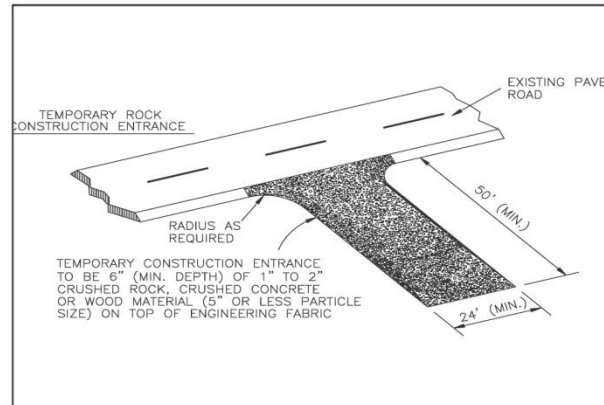
Year	NOVs Issued	BMP	Grass Buffer	Illegal Entrance	Illegal Discharg	Inlet Protection	Permit	Tracking	Total
2011	190	110	11	51	2	32	44	125	408
2010	229	175	18	66	3	35	56	76	463
2009	295	175	16	93	2	43	38	64	477
2008	304	197	8	130	16	34	44	121	575
2007	351	291	152	340	8	38	178	65	1,166
2006	36	-	-	-	-	-	-	-	36
2005	-	-	-	-	-	-	-	-	-

## Specifications

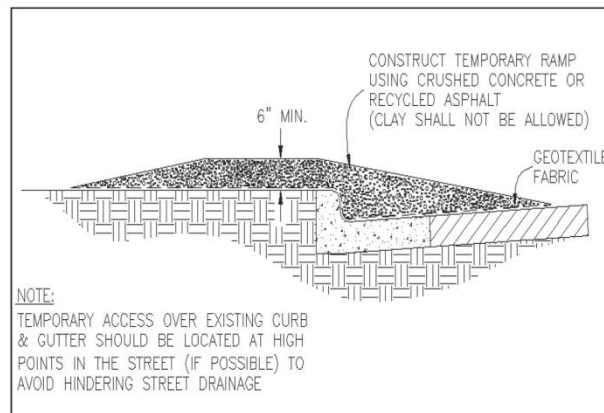
•For all city of Fargo construction specifications please visit us online at [www.cityoffargo.com](http://www.cityoffargo.com) (Engineering).

## Report a stormwater violation

•Stormwater violations may be reported by either calling 701-241-1545 or e-mail us at [stormwater@cityoffargo.com](mailto:stormwater@cityoffargo.com)



Typical Temporary Entrance Detail



Typical Curb & Gutter Temporary Entrance Detail

## Tracking

• Is a major problem on construction sites. Operators must effectively manage tracking as it occurs.

## Maintenance

It is the responsibility of the owner/operator to provide maintenance of all BMPs on site until the project is complete or the lot reaches final stabilization. Maintenance items that may need to be completed on site include;

- Tracking- scrape/sweep as required in traffic areas.
- Temporary Entrance- add material as necessary.
- Perimeter controls- ensure proper installation, clean when sediment has reached 1/3 the capacity of the device.
- Inlet protection- ensure proper installation, clean when sediment has reached 1/3 the capacity of the device.
- Concrete Waste Disposal Areas- ensure the disposal sites are contained and properly marked. Remove the concrete once the site has reached 1/3 of its capacity (developer) and do not use the site if it is completely full.

## Final Stabilization & Removal

BMPs will need to be removed to achieve final grading; this should be done to coincide with seeding and sodding of the lot. During the final grading, placing soil on the street must be avoided. The boulevard along the curb must receive one of the following treatments within (5) days if it is disturbed during the final grading:

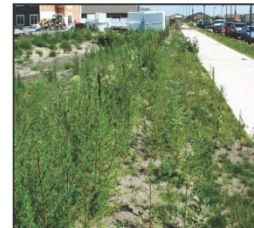
- Sod
- Seed with sprayed fiber mulch or Anchored straw mulch
- Installation of BMPs (silt fence, fiber rolls, etc.)



Tracking management



Hydro seeded Boulevard



Functioning vegetative buffer

# Construction Program Overall ?

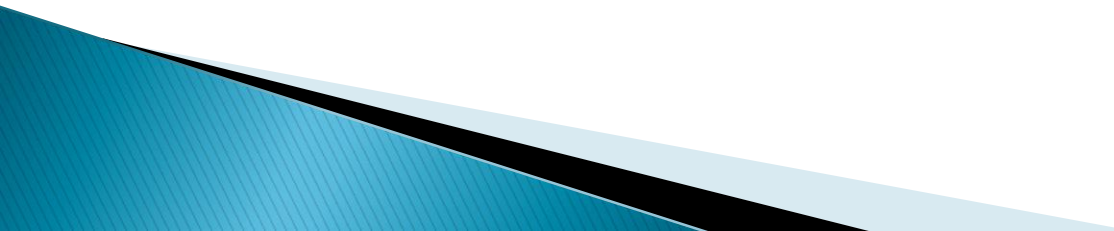
Overall construction stormwater conditions  
are vastly better today.

Public infrastructure construction is much  
better today.

Construction practices in general relating to  
stormwater are better today.



# Future on the construction side

- ▶ Try new more new products and techniques
  - ▶ Educate and re-educate
  - ▶ Incentive / recognition program?
  - ▶ Revamping of laws, penalty fees, etc.
  - ▶ Dedicated permanent employee
- 

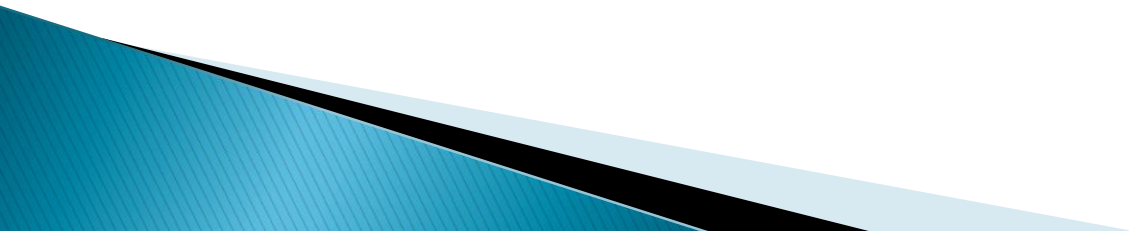


# “Good government takes time”

Mark Bittner

Director of Engineering

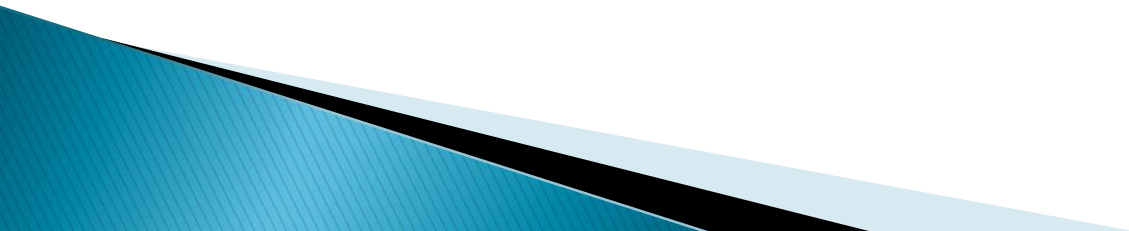
City of Fargo



# POST CONSTRUCTION

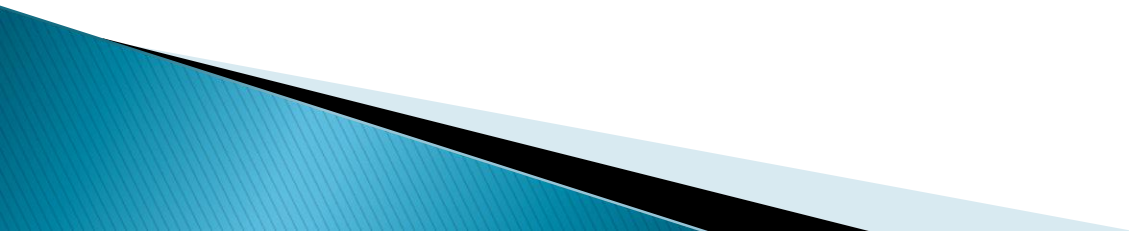
What do we consider?

- **MEETING NEW MS4 PERMITs**
- **NEW DEVELOPMENT**
- **REHABILITIATION**
- **EXISTING DEVELOPMENT**
- **OPERATIONS WITHIN**



# Study the system as a whole:

Drainage areas, pond capacities runoff rates,  
impervious surface effects, lift station wet  
wells, treatment chains and more....

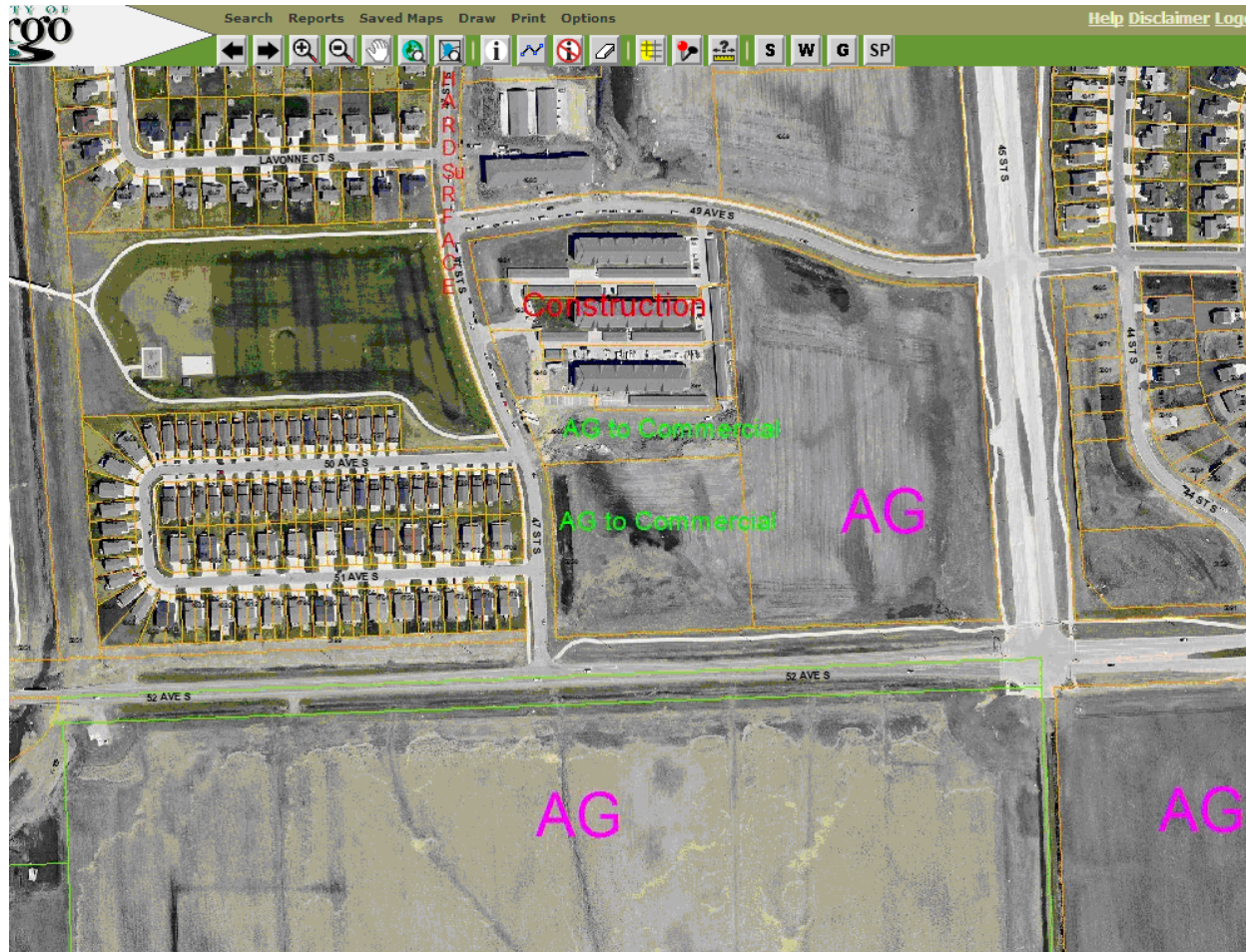


# What about?

- ▶ **Transitional or Confluence Areas**
- ▶ **In-fill or Redevelopment**
- ▶ **Homeowner Operations**
- ▶ **Business Interconnect (OPS)**
- ▶ **Municipal Operations, STS**
- ▶ **Partners**



# Transitional Areas





# Confluence Areas



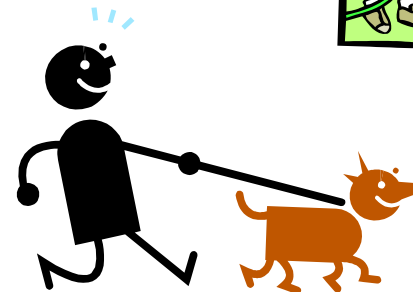
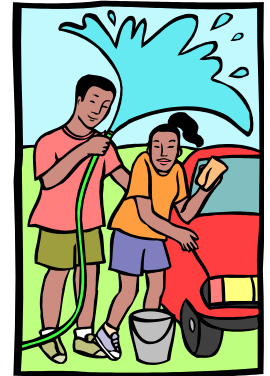
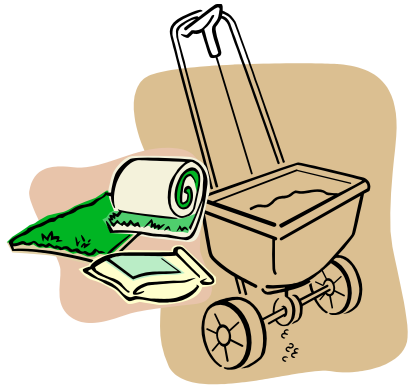
# In-fill or Redevelopment

- ▶ High Cost?
- ▶ Limited Space?
- ▶ Forced into a subterranean environment?
- ▶ Public Regional Retention (Very high cost)?





# Homeowner Operations





## Stormwater Pollution: Information for Homeowners

### Is that a pollutant?

Common pollutants entering the stormwater system go beyond garbage, litter, household cleaners and vehicle fluids. Sediment, pet waste and yard waste are common pollutants that affect the stormwater system and our rivers and streams.

### Drains to the River:

Anything that flows into the gutter drains unfiltered into the river.



The City of Fargo is committed to keeping its waterways and stormwater system clean. We need help from all citizens and businesses to accomplish this task. Diligence in some common areas goes a long way to keeping our waters clean.

#### New lawns:

New homes in the city are often sold without established lawns. Erosion control on bare soil is essential to keep sediment on your lot and out of the stormwater system where it will clog pipes and deteriorate the quality of our waterways. Some points to consider:

- The home builder is required to leave erosion control devices in place if the lawn is not covered. The fiber roll is most common, which is a long straw tube placed along the top side of the curb. If the roll or any other erosion control device is deteriorated, run over or torn, it needs to be replaced.
- Sod, or seed your new lawn as soon as possible. If the soil is covered with grass, it will not erode. Be sure not to remove the fiber rolls too soon, the ground needs to be 70% covered to effectively control erosion.
- Seeding grass along the boulevard is an excellent erosion control practice. If you don't plan to sod your new lawn right away, seeding from the sidewalk to the street will control erosion on your lot and allow you to remove the fiber roll.

#### Lawn Care:

Common lawn care can contribute to stormwater pollution, unless a little care is taken. Once in the water, yard, garden and pet waste release nutrients which promote over-growth of algae and other nuisance aquatic species. Decomposition of grass, leaves and excess algae consumes oxygen in the water causing potential fish kills. Avoid the following:

- Mowing into the street. Bag or mulch your lawn clippings, never blow clippings into the gutter.
- Over fertilization. Follow all published instructions and guidelines when fertilizing your lawn.
- Pet waste. Collect and dispose of pet waste properly.

#### Landscaping options:

Common landscaping practices can improve water quality and reduce irrigation, care and chemical costs. Refer to the River Keepers web site at <http://riverkeepers.org/index.php/resources> for more information on:

- Rain gardens
- Mulching
- Xeriscaping

Other beneficial options are also detailed.



Mulch or bag lawn clippings. Never mow into the gutter.



Erosion control devices left by the contractor need to be taken care of until the lawn is growing. If flattened, broken or run over, they need to be replaced.



Rain gardens are a good way to improve water quality and reduce runoff from your lawn.

**WARNING**  
**Dumping is ilegal**



September 10, 2009

The City of Fargo recently conducted a stormwater inspection of Rose Creek from 40th Avenue South to 25th Street. Numerous instances of dumping were observed on the bank and waters of Rose Creek. Photos are provided for clarity.

**The dumping of debris or other materials** such as grass clippings, vegetative materials, tree branches, earth fill, rocks, concrete chunks, metal, other demolition or construction materials, or structures is a Prohibited Discharge. **It is ilegal to dump such items in or near water conveyances including Rose Creek.**

In accordance with Fargo Municipal Code 37-0402 - a **Notice of Stormwater Violation and order to correct** will be issued to property owners who continue dumping prohibited debris or material.

This letter will serve as notice to homeowners that dumping items listed above is ilegal. From this date forward the Violation notice will be issued for all instances of dumping.

*For more information visit these websites:*

[www.cityoffargo.com](http://www.cityoffargo.com)

- >Auditor's Department for city ordinance (Chapter 37)
- >Engineering Department for floodplain & stormwater management
- >Health Department for environmental health
- >Solid Waste Department for yard recycling maps & information

[www.epa.gov](http://www.epa.gov)

- >Concerned Citizens

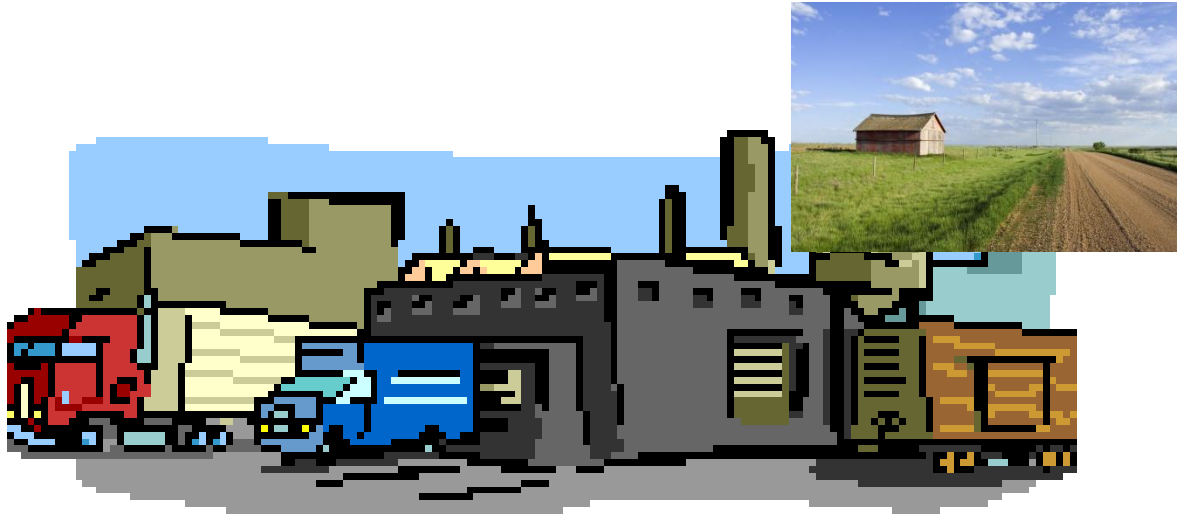
[www.riverkeepers.org](http://www.riverkeepers.org)

- >Beneficial uses of the Red River of the North

[www.ag.ndsu.edu](http://www.ag.ndsu.edu)

- >Home-Lawn-Garden-Trees

# Business Interconnect







# General Notice Fact Sheet Sent to Area Businesses



## Stormwater Pollution Prevention for Businesses

**Did you know?**  
Most citizens and businesses contribute to stormwater pollution without even knowing it. Rainwater and snowmelt picks up nearly all the material it encounters on its way to the storm drain. Once in the drain, these pollutants are dumped directly into the river unfiltered.

**It's just a little dirt...**  
The stormwater system is meant to carry only water. Dirt, garbage and other material gets caught in the system causing greater maintenance, slower drainage and shortened life. This all adds up to greater cost to the city and taxpayers.



The City of Fargo is committed to keeping its waterways and stormwater system clean. We need help from all citizens and businesses to accomplish this task. Diligence in some common areas goes a long way to keeping our waters clean.

**Dumpsters**  
Keeping lids closed, avoid overfilling and regularly picking up around dumpsters will keep the trash in the receptacle and out of the storm drain.

**Lot Sweeping**  
Your business hosts a lot of traffic, and with each of your customers comes dirt and sediment left in your lot from their cars. Regular sweeping of the lot will keep your business looking good and the sediment out of the storm sewer.

**Grease**  
Regularly clean and maintain grease traps and dispose cooking grease in the proper containers. Keep these containers closed and regularly emptied will keep the grease out of the storm water. Remember, once in the stormwater system, it drains directly to the river untreated.

**Vehicle Fluids**  
Vehicle leaks and spills need to be cleaned immediately. Whether it be a gas spill at the pump, or a vehicle leaked in a parking lot; clean it up with an absorbent and sweep it off. Never flush with water.

**Mowing and Landscaping**  
Mulching your lawn clippings provides nitrogen and preserves moisture cutting down on the need, and expense of watering and fertilizing. Extra pesticides, fertilizer, or simply mowing grass clippings into the gutter all contribute to algae growth in the river. Decay of grass and leaves in the river reduces oxygen levels leading to fish kills.

**Snow Removal**  
That pile you pushed off your lot is not all snow. By spring, there is a season's worth of litter, sand and sediment in that pile waiting to flow into the storm sewer. Pile snow in grassy areas to filter material out of the snow melt when possible, or regularly collect trash as it emerges in the spring. Never push snow into a pond, drain, ditch or river. City, state and federal laws prohibit this practice to try and keep the waterways as clean as possible.



More material in the storm drain = Less water in the pipes = More water in the streets = More \$\$ to clean = More \$\$ to replace



When lawn clippings and trash are not picked up from lots, it plugs storm drains and flows into the river.



There is more than just snow in the snow pile. Months worth of soil and garbage are stored up, waiting to be carried into the storm sewer in the spring.





Spills of any kind cannot be allowed to reach the storm drain.



Clean oils spills promptly. Once oil reaches the drain, it WILL dump into the river.



Regular lot sweeping keeps a nice lot and a clean storm drain.

#### Resources:

City of Fargo, Stormwater Engineering  
[www.cityoffargo.com](http://www.cityoffargo.com)

ND Department of Health  
[www.ndhealth.gov/WQ](http://www.ndhealth.gov/WQ)

Environmental Protection Agency  
[www.epa.gov/region8/water/nps](http://www.epa.gov/region8/water/nps)

River Keepers  
[www.riverkeepers.org](http://www.riverkeepers.org)



Always clean spills properly. Never flush the spill with water.



#### Remember:

The storm sewer system drains directly to the Red River where it has adverse affects on fish, wildlife, and our drinking water supply. Keep our drains, creeks ditches and rivers clean.

FARGO, ND 58102

Re: Prohibited Discharge into Storm Sewer System

Dear Gary:

This letter will serve as notice that your operation's surface discharge at Granites Unlimited, 1547 1 Avenue North, Fargo, ND is in violation of Chapter 37-0403 (D) (Prohibited Discharge) of the Fargo Municipal Code.

A Prohibited or illicit discharge is defined as discharging material that would degrade the quality of waters within the storm sewer system.

**The issue:**

Discharge of sediment laden water into storm sewer system.

**The reason for our concern:**

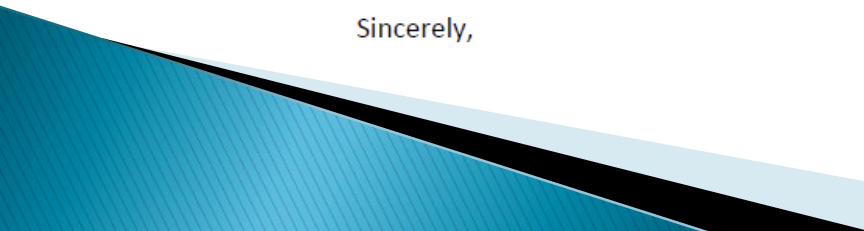
The City of Fargo is a Municipal Separate Storm Sewer System (MS4) operator and is permitted by the North Dakota Department of Health (NDR04-0000) to manage our storm sewer system for water quality. The permit requirements are mandated from the USEPA under the National Pollution Discharge Elimination System (NPDES).

**Site Inspection:**

A site inspection will be conducted by Fargo Sanitary / Storm Sewer Departments and Environmental Health and Street Departments. This inspection will review your discharge operations concerning water quality requirements. We will discuss options and alternatives you can implement to meet federal, state and local water quality regulations.

Please contact me for more information and to arrange an inspection date.

Sincerely,



# Storm Sewer Utility

## Municipal Operations

- Detention/retention pond
- Hydraulic model
- Map Impervious
- Utility fee structure
- Review/update policies
- Software

## Maintenance Operations Review (Public Works)





# Erosion and Sediment Control for Right-of-Way Construction



## Stormwater Fact Sheet

### Reference:

City of Fargo Ordinances 8,  
18 & 37

Utility Companies or contractors working within the street right-of-way must:

- Obtain an excavation permit from the City Engineer
- Implement Stormwater protection measures and best management practices to minimize the risk of sediment and other contaminants reaching the stormwater system.

### Violation Procedure:

Violation of the City's erosion and sediment control ordinance will result in:

- Notice of Violation and order to correct will be issued upon initial violation
- If not corrected within 48 hours, a reinspection fee will be issued at a rate \$60/hr for inspection time.
- Further failure to correct will be subject to prosecution in Municipal Court and fine of up to \$500.

The City of Fargo is committed to keeping it's waterways and stormwater system clean. To accomplish this goal, all work done within the city must implement Best Management Practices (BMP) such as:

### Inlet Protection

Protect all inlets that drain your site.  
Sandbags, Fiber Rolls and commercially produced Inlet Protection devices are all acceptable.



Maintain inlet protection. Keep soil from the gutter.

### Tracking Control

Use of track pads, rock entrances or concrete aprons is strongly encouraged.

### Street Sweeping

Tracked material needs to be removed and placed back on site at least daily.

### Limited Site Access

Site access in new developments MUST be limited to a single point per block.  
Coordinate with other contractors in the area.  
Jumping of the curb is NOT allowed.



Track pads protect the curb and lawn. Tracking is controlled very well.

### Treating Dewatering Discharge

Discharge from dewatering pumps must be treated to keep sediment laden water out of the gutter.  
Untreated pumping will result in an immediate work stoppage on the entire jobsite/project.

### Material Cleanup

All stockpiles and materials are to be removed from the site within one day of job completion.

### Replacement of Vegetation

Disturbed vegetation must be addressed within seven (7) days of work completion.  
All seeded/sodded areas must conform to C.O.F. standard Specifications 3100-3200.

### Coordination of Others

Your activities must not render ineffective the erosion prevention and BMPs in use by another contractor at or near your site.

### Inspection and Maintenance

All erosion control devices must be inspected weekly and after each 1/2 inch or more of rainfall.  
All devices need to be maintained, repaired or replaced to ensure effective controls until the job is complete.

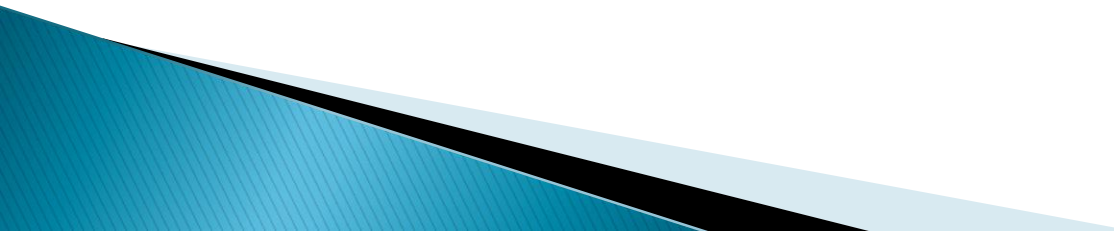


Concrete trucks are not to be allowed to washout in the street. Remove material and cleanup at the end of the job.

# Jackie Brookner Biospaces and Detention Ponds?



# Partnering Please

- ▶ Contractors
  - ▶ Fargo Cass Environmental Health
  - ▶ FM Home Builders
  - ▶ Public Works
  - ▶ Police Department
  - ▶ Public
  - ▶ River Keepers
  - ▶ Schools
- 

# Questions?

